As described above, if phosphorescence from a triplet exciton can be put to practical use, it can realize the external light emitting quantum efficiency three to four times as high as that in the case of using fluorescence from a singlet exciton in principle.

The structure according to this embodiment can be freely implemented in combination of any structures of the Embodiments 1 to 5.

[Embodiment 7]

This embodiment describes the actual voltage-current characteristic of an EL element having a defect portion when a reverse bias voltage is applied to the EL element.

The EL element used in this embodiment is structured as follows. First, a hole injection layer is formed by evaporation to a thickness of 20 nm from copper phthalocyanine on an anode formed of a compound of indium oxide and tin oxide (ITO). Next, an MTDATA layer with a thickness of 20 nm and an α-NPD layer with a thickness of 10 nm are formed by evaporation as a hole transporting layer. On the hole transporting layer, a light emitting layer is formed of a self-luminous material, Alq_3, that is a singlet compound by evaporation to a thickness of 50 nm. An electron injection layer is formed next from lithium acetylacetonate (Liacac) to a thickness of 2 nm. Then a cathode is formed from an aluminum alloy to a thickness of 50 nm to complete the EL element.

Fig. 14 shows the voltage-current characteristic of the EL element structured as above when a reverse bias voltage is applied to the EL element. The reverse bias current becomes larger toward Point A at which the reverse bias voltage is -5 V and declines past that point.

Despite the EL element being damaged, the reverse bias current increases, owing supposedly to application of reverse bias voltage, but declines past Point A. Therefore

it can be deduced that some change in defect portion takes place at Point A to raise the resistance of the defect portion.

In the repairing method of the present invention, the level of reverse bias voltage to be applied to the EL element and voltage application time varies depending on the material of an anode, a cathode, and an EL layer of the EL element and the structure of the EL element. If the reverse bias voltage is remarkably low, effects of the present invention cannot be obtained but in as case of being remarkably high a reverse bias voltage accelerates degradation of the EL layer or damages the EL element itself.

According to the voltage-current characteristic shown in Fig. 14, the reverse bias current sharply increases with a reverse bias voltage of -6.5 V or lower. Therefore, in the case of the EL element used in this embodiment, the EL element is probably about to be damaged or the EL layer comes near to degrade when a reverse bias voltage of -6.5 or lower is applied.

The level of reverse bias voltage to be applied to the EL element and voltage application time have to be set by one who intends to carry out the present invention so as to suit the material of an anode, a cathode, and an EL layer of the EL element and the structure of the EL element.

[Embodiment 8]

This embodiment describes the voltage-current characteristic of an EL element in the case where a direct reverse bias voltage is increased until it reaches an avalanche voltage (V_{av}) and then decreased.

Fig. 15 is a graph of the voltage-current characteristic when a direct reverse bias voltage is increased until the avalanche voltage (V_{av}) and then decreased. As the reverse bias voltage is increased, a reverse bias current I_{rev} temporarily surges at Point B, Point

C, and Point D, where some change takes place in the defect portion to transform the defect portion into the transmuted portion.

No particular change in reverse bias current I_{rev} is observed as the reverse bias voltage V_{rev} declines after the voltage reaches the highest at V_{av}.

This embodiment may be combined freely with Embodiments 1 through 7.

[Embodiment 9]

This embodiment gives descriptions on a sectional view of a light emitting device to which a repairing method of the present invention is applied.

In Fig. 16, an n-channel TFT is used for a switching TFT 721 formed on a substrate 700.

The switching TFT 721 in this embodiment has a double gate structure in which two channel formation regions are formed. However, the TFT may take a single gate structure having one channel formation region or a triple gate structure having three channel formation regions.

A driving circuit formed on the substrate 700 has an n-channel TFT 723 and a p-channel TFT 724. Although the TFTs of the driving circuit are of single gate structure in this embodiment, the TFTs may take the double gate structure or the triple gate structure.

Wiring lines 701 and 703 function as source wiring lines of the CMOS circuit whereas 702 functions as a drain wiring line thereof. A wiring line 704 functions as a wiring line that electrically connects a source wiring line 708 to a source region of the switching TFT. A wiring line 705 functions as a wiring line that electrically connects a drain wiring line 709 to a drain region of the switching TFT.